

AMENDMENTS TO THE CLAIMS

Listing Of Claims

Claims 1-23 (canceled)

24. (currently amended) A semiconductor package comprising:

a substrate ~~comprising~~ having a first surface and a second surface;

a semiconductor die having a first outline and a face bonded directly to the second surface;

a first mask on the first surface;

a second mask covering the second surface except in a die attach area defined by an opening through the second mask having a second outline corresponding to the first outline;

the first mask and the second mask comprising a photoimageable material and the opening comprising an exposed and developed portion of the second mask;

an adhesive layer between the face and the die attach area bonding the die directly to the second surface; and

an encapsulating resin on the die and on the second mask.

25. (previously presented) The package of claim 24 wherein the second outline is only slightly larger than the first outline.

26. (previously presented) The package of claim 25 wherein the adhesive layer comprises a filled epoxy, acrylic or polyimide material configured to transfer heat directly from the face to the second surface.

27. (currently amended) A semiconductor package comprising:

a substrate ~~comprising~~ having a first surface and a second surface;

a semiconductor die having a first outline and a face bonded directly to the second surface;

a first mask on the first surface;

a second mask on the second surface comprising a second opening having a second outline corresponding to the first outline defining an open die attach area on the second surface;

the first mask and the second mask comprising a photoimageable material and the second opening comprising an exposed and developed portion of the second mask; and

~~a filled adhesive layer between the face and the die attach area bonding the die to the substrate and configured to transfer heat directly from the face to the substrate, and~~

~~an encapsulating a resin on~~ encapsulating the die and ~~on~~ covering the second mask.

28. (currently amended) The package of claim 27 further comprising a filled adhesive layer between the face and the die attach area bonding the die to the substrate and configured to transfer heat directly from the face to the substrate.

~~wherein the filled adhesive layer comprises a material selected from the group consisting of epoxy, acrylic and polyimide.~~

29. (previously presented) The package of claim 27 wherein the second outline is only slightly larger than the first outline.

30. (currently amended) A semiconductor package comprising:

a substrate having a first surface, a second surface and a bonding opening there through;

a plurality of conductors on the first surface having a plurality of wire bonding pads;

a first mask on the first surface at least partially covering the conductors;

a second mask on the second surface except in a die attach area defined by an opening in the second mask;

the first mask and the second mask comprising a photoimageable material and the opening comprising an exposed and developed portion of the second mask;

a semiconductor die on the die attach area having a face aligned with the bonding opening attached directly to the second surface;

a filled adhesive layer attaching the face directly to the die attach area and configured to transfer heat directly from the face to the substrate;

a plurality of wires in the bonding opening bonded to the die and to the wire bonding pads; and

~~an encapsulating a resin on the second mask~~
encapsulating the die and covering the second mask.

31. (previously presented) The package of claim 30 wherein the die attach area has an outline only slightly larger than that of the die.

32. (previously presented) The package of claim 30 wherein the substrate comprises an organic polymer.

33. (previously presented) The package of claim 30 wherein the adhesive layer comprises a material selected from the group consisting of epoxy, acrylic and polyimide.

34. (currently amended) A semiconductor package comprising:

a substrate ~~comprising~~ having a first surface, ~~an opposing a~~ second surface and a wire bonding opening from the first surface to the second surface;

a plurality of conductors on the first surface comprising a plurality of wire bonding pads;

a first mask on the first surface;

a semiconductor die aligned with the wire bonding opening and bonded face down directly to the second surface, the die having a first outline;

a second mask substantially covering the second surface and including an opening there through having a second outline corresponding to but only slightly larger than the first outline defining a die attach area on the second surface;

the first mask and the second mask comprising a photoimageable material and the opening comprising an exposed and developed portion of the second mask;

an adhesive layer between the die and the die attach area bonding the die directly to the second surface;

a plurality of wires in the wire bonding opening bonded to the die and to the wire bonding pads; and

an encapsulating resin on the second mask encapsulating the die.

35. (previously presented) The package of claim 34 wherein the second outline is only slightly larger than the first outline.

36. (previously presented) The package of claim 34 wherein the adhesive layer comprises a filled adhesive configured to transfer heat directly from the face to the substrate.